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ABSTRACT

The yearly percentage of minority earned doctorates in psychology has not increased appreciably since 1978. An attempt to discover departmental variables associated with the production of greater percentage rates involved 13 institutions drawn from the population of college and university psychology departments offering the Ph.D. degree. The percentage of minority earned psychology doctorates at a college or university was used as the outcome measure. Only U.S. citizens and permanent residents were included. Since the numbers of minority doctorates produced in a single year by any one institution can be quite small, the sample data were collapsed across the four nonconsecutive years for which they exist: 1975-76, 1976-77, 1978-79, and 1980-81. The outcome measure was correlated with each item and the entire data set factor analyzed. The results indicated that minority populations were associated with higher percentages of minority baccalaureates, but not doctorates. Furthermore, older, large departments connected well to the American Psychological Association and offering more minority considerations (e.g. application fee waivers and tutorial services), and existing in large urban institutions in states with lower percentages of minority baccalaureates, were associated with greater percentages of minority doctorates. Departments in large, old public and land grant institutions, however, were not. (Author/NRB)

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Convention of the

American Psychological Association

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ABSTRACT

VARIABLES ASSOCIATED WITH PRODUCING GREATER PERCENTAGES OF MINORITY EARNED DOCTORATES

BY

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The yearly percentage of minority earned doctorates in psychology has not increased appreciably since 1978. The aim was to discover departmental variables associated with the production of greater percentage rates. The study sample included sixty-three institutions drawn from the population of college and university psychology departments offering the Ph.D. degree. The percentage of minority earned psychology doctorates at a college or university was used as the outcome measure. Only U.S. citizens and permanent residents were included. Since the numbers of minority doctorates produced in a single year by any one institution can be quite small, the sample data were collapsed across the four inconsecutive years for which they exist: 1975-76, 1976-77, 1978-79, and 1980-81. The outcome measure was correlated with each item and the entire data set factor analyzed. Minority populations are associated with higher percentages of minority baccalaureates, but not doctorates. Furthermore, older, large departments connected well to the American Psychological Association and offering more minority considerations (e.g. application fee wavers and tutorial services), and existing in large urban institutions in states with lower percentages of minority baccalaureates, are associated with greater percentages of minority doctorates. However, departments in large, old public and land grant institutions are not.

Minorities have always been proportionately underrepresented among holders of doctoral degrees. Efforts to rectify this situation have been meeting with little success across academic areas. Psychology is not exceptional.

The yearly percentage of minority earned psychology doctorates has not increased appreciably since 1978. In that year, minorities comprised 3.1 percent of APA doctoral members according to APA's 1978 Human Resource Survey (Russo, Olmedo, Stapp, & Fulcher, 1981; Stapp & Fulcher, 1981). That same year saw 6.8 percent of all psychology earned doctorates going to minorities (NRC, 1979). The latest figures, for 1983, indicate that 8.3 percent of doctorates in psychology were earned by minorities (NRC, 1983). Painfully slow improvement in the face of what Russo et al. (1981) termed "continuing severe underrepresentation of minorities."

This study concerns itself with discovering variables correlated with producing greater percentages of minority earned doctorates from psychology departments. Their clear identification could lead to policies that would increase the numbers of minority earned doctorates in all of psychology as well as in other areas. Arguements that can be measured by publicly available data are investigated:

The federal government initiated its support of higher education with the Morrill Acts of 1862 and 1890. Public lands were donated to states to be used (or sold and the funds used) for the establishment of public colleges. Funds were also authorized to support these land grant institutions. The concept of federally supported higher education connotes the idea of a more equal opportunity for all. The expectation is that "Land Grant" institutions would produce the greater percentages of minority earned psychology doctorates.

An older institution would necessarily have a greater historical perspective to its character. Its traditions and procedures would have "stood the test of time" and would therefore be less susceptible to what could be viewed as short lived societal demands for changes in its recruitment, admission, and operating policies. Following this argument, one would expect that the older university would turn out the smaller percentage of minority earned doctorates in psychology.

The same argument regarding limitations on rapid change for older institutions can also be made for older psychology departments. An historically determined perspective would make it less likely that the older department would change its way of doing things to accommodate perceived short term demands from a small segment of society. The older department would produce a lower percentage of minority earned doctorates.

Public institutions are less dependent on tuition and fees since they are subsidized by the tax-payers. By the same token, they are expected to remain in financial reach of those that support them. Since minorities are over-represented among the poor, one could argue that they would more readily attend these institutions. Therefore, public insitiutions would produce a greater percentage of minority earned psychology doctorates than would private universities.

Minorities tend not to be evenly distributed among all areas of graduate study. This phenomenon may also be present within an academic area. If this is the case, a department that offers a greater number of graduate programs would have a better chance of attracting minority students and producing the greater ratio of minority earned doctorates.

The middle and upper classes of this society produce most of the college population. Individuals that come from environments that do not usually produce college students might be more interested in socially oriented issues than the typical college student since a larger social difference exists between home and college environments. This difference may act to instill a sense of resolve in these individuals to try to do something about social problems and inequities. A department that offered more socially oriented programs would attract more minority graduate students and produce minority earned doctorates in greater ratios.

Government, as the representative will of the people, is expected to be responsive to societal demands. A current demand is that it use its control of the public purse to fulfill its social responsibilities to the poor and socially disenfranchised. One would expect that a state government would influence public institutions to be more responsive to minority education and be most effective with those schools in closest proximity. An indication of this would be the production of greater ratios of minority earned doctorates.

Because the nature of graduate study makes applying to a graduate program a very selective matter, one may find himself accepted to a program some distance from home. Poor people could find it difficult to attend a school far from home. Initial transportation costs and those projected for visits home would weigh into the decision to go away to school. Even daily transportation costs could prove a hardship in many cases. The greater percentages of minority earned doctorates would be expected from institutions that have greater percentages of minorities living in close, geographic proximity to it.

Even if the campus is geographically accessible to minorities, the department may not be viewed as academically accessible. A probable effect of the societal treatment of minorities is a heightened susceptability to disproportionate feelings of inadequacy. A department with a good reputation may not necessarily be considered desirable by a minority student. The cultivation of institutional prestige carries with it the notion that well prepared, bright students would be likely classmates and competitors. The minority person may not wish to locate in a department in which s/he may feel unwanted or insufficiently prepared. If there is also a perception among prospective minority applicants that a good percentage of their fellow students are likely to be financially secure, visions of an uncomfortable social atmosphere are added. The more prestigious schools would encounter a limited number of minority applicants which would lessen the ratio of minority students enrolled and that would eventually graduate.

Psychology graduate programs may or may not exhibit flexibility in their attempts at affirmative actions. For most

programs, traditional predictors of success in graduate school have proven less than adequate, but the same formulas have continued to be used in reviewing applicants because less traditional credentials are not normalized across the population and therefore tend to be subjective. The emphasis on affirmative action has worked as a catalyst toward expanding the set of predictors for many programs. The exceptions include the most prestigious of institutions which see "creaming" as an answer to the call for affirmative action.

A ubiquitous reason given to slow affirmative action progress is that qualified applicants do not exist. This indeed appears to be true in many academic areas. The social sciences, and more specifically psychology, are not among them. Adequate numbers of minority psychology undergraduates are noted in national figures.

Aggressiveness in seeking out prospective minority applicants would logically act to increase the number of actual minority applicants to graduate programs. Some institutions may not need to expend resources in this direction, but others may, although not realize it. Still others could recognize the need, but feel constrained by limited resources.

Affirmative action activities may depend upon the general fiscal well being of a department. Newly funded programs and positions may not have time to be fully accepted or incorporated into regular university life before budget cuts pare them. This may erase whatever affirmative action gains a department makes.

These reasons may singly, or in combination, be responsible for the lack in progress toward overall equity in psychology graduate program participation by minorities and would indicate that the more accommodating a department in actions advantageous to the admission and retention of minorities, the greater its percentage of minority earned doctorates.

It would appear that the greater the heterogeneity of students and faculty at a university, the more tolerant the atmosphere for minorities and their concerns. This would probably be reflected best in the diversity of departments and courses and the numbers of faculty, administrators and students. The greater diversity of institutions may be correlated with attracting greater ratios of minority students and keeping them on to graduation.

METHOD

The present study was conducted in coordination with a national study which aimed to identify experimentally the social and institutional processes and conditions that determine the adoption of a new psychology graduate program (Fairweather, Fergus, & Mavis, 1984).

Subjects. The United States population of college and university psychology departments offering the Ph.D. degree was considered for the sample with the exception of those departments that offered graduate degrees in community, community/clinical, applied social, applied experimental, or program evaluation. These programs contain some of the elements found in the new program. A second excluded group was professional schools since they are not typical psychology graduate programs. Finally, departments with extensive prior contact with the Ecological psychology program at M.S.U. were also eliminated from the study. The remaining 125 departments were randomly assigned to experimental and control groups. The present study uses the 63 institutions in the experimental group as its sample. This represents 25 percent of all U.S. psychology departments.

Outcome measure. Four reports entitled Data on Earned Degrees Conferred by Institutions of Higher Education by Race, Ethnicity, and Sex (DED) were the source of the outcome measure. The U.S. Department of Education's Office for Civil Rights generates earned degrees data from the Higher Education General Information Survey (HEGIS) which is conducted by the National Center for Educational Statistics (NCES). All institutions that receive Federal financial assistance are required to participate in this annual survey.

DED reports are the only relatively complete source of earned degrees data by institution, ethnicity, and gender generally available on a continuing basis. Unfortunately, budgetary constraints have forced changes in the original plan for year to year production of these reports and their timely dissemination. The four academic years available are inconsecutive: 1975-76, 1976-77, 1978-79, and 1980-81.

The proportion of minority earned doctoral degrees is used as the outcome measure for the effects of process variables leading to equitable, proportionate representation of minorities in graduate program applicant pools, their admission to graduate programs, and their retention on to graduation. Since the numbers of minority doctorates produced in a single year by any one institution can be quite small, the doctoral graduates for each college and university were collapsed across the four available years. Only U.S. citizens and permanent residents were included.

Procedure. Institutional demographic data were gathered from university catalogs and bulletins (UCB). They include descriptions of major academic divisions, research and service units. Also, the number of professional schools and graduate degree programs, the year the institution was founded, the city or town in which it is located, and its distance from the state

capitol were collected from this source. Data on enrollments were taken from the Yearbook of Higher Education 1980-81 (YHE). Graduate Study in Psychology (GSP), published by the APA, was used for various information related to department offerings, admissions flexibility, minority considerations, age of department, and full and part-time faculty. An NCES data tape provided information on an institution's land grant status and whether it is publicly or privately held. The 1980 U.S. Census (USC) was used for information on minority population ratios. The American Psychologist (AP) journal was surveyed from 1976-80 for numbers of officers, representatives, board members, and committee members in order to measure a department's professional ties to APA.

In addition, each department was assigned a prestige scale score. A non-published measure was used since available studies did not include all of the departments found in the sample. The designated score was the mean number of faculty publications in seventeen APA sponsored journals in 1979:

American Psychologist
Animal Behavior Processes
Developmental Psychology
Human Learning and Memory
Human Perception and Performance
Journal of Abnormal Psychology
Journal of Applied Psychology
Journal of Comparative and Physiological Psychology
Journal of Consulting and Clinical Psychology
Journal of Counseling Psychology
Journal of Educational Psychology
Journal of Experimental Psychology
Journal of General Psychology
Journal of Personality and Social Psychology
Professional Psychology
Psychology Bulletin
Psychological Review

Also, authorships reviewed in the 1975-79 volumes of Contemporary Psychology were included. Co-authorships were treated as separate publications as were published commentaries and brief notes. Articles published from dissertations were credited to the institution where the research was conducted.

The outcome measure was correlated with each item measuring a hypothesis using the Pearson product-moment correlational coefficient. A $p<.05$ level of significance was expected. These data, along with other collected data, were also cluster analyzed to assist in describing general interrelationships among various historical, demographic, organizational, and process variables.

In a cluster analysis of variables, composite groups of similar variables are objectively formed so that groups are similar within themselves but different from the other groups. The analysis is based on the property of collinearity in that the definers of a cluster fall on the same line, i.e., are collinear. "Generally, collinearity is defined by the line graph of the correlation coefficients of two variables with all

the variables in the study, their correlation profiles. Collinear variables have the same profile of correlations....Clusters of collinear variables have two objective characteristics of similarity: they correlate positively with each other, and they follow the same pattern of correlations with other variables. They also are objectively different from other clusters of collinear variables because their common correlation profiles have a different shape from that of other clusters" (Tryon and Bailey, 1970, p. 47).

A measure of relational strength and direction between clusters was also obtained by computing the interdomain correlations. This is an estimate of what the correlations would be among the clusters if a great many additional samples of variables were drawn that were collinear with the observed set. This is a more important technique than finding the simple correlation between cluster scores since those scores would be subject to sampling error.

Each hypothesis, along with the items used to measure it, is indicated below. Items are followed by the previously specified abbreviation for the source from which it was taken and/or calculated. In some cases, a more involved description of a measure's derivation is presented:

H1. "Land Grant" institutions produce a greater percentage of minority earned psychology doctorates.

Whether a "Land Grant" institution (NCES).

H2. The older an institution, the smaller the percentage of minority earned doctorates in psychology.

Date university founded (UCB).

H3. Public institutions produce a greater percentage of minority earned psychology doctorates than do private universities.

Present status; public or private (NCES).

H4. The older a department, the lower the percentage of minority earned doctorates.

Year department established (GSP).

H5. The more programs a department offers, the greater the ratio of minority earned doctorates.

Total number of programs in the department (GSP).

H6. The greater the social orientation of departmental programs, the greater the percentage of minority earned doctorates.

Each department was assigned an overall social orientation score. Each departmental program (GSP) was first assigned a value of one, two, or three (three was high) according to the degree it was seen as socially oriented. Values were then summed and divided by the total number of departmental programs. This comprised the overall social orientation score. The list of the types of departmental programs encountered and categorized according to this social orientation scheme follows.

Non-Socially Oriented: Code = 1
- Biopsychology
- Cognitive / learning / perception
- Developmental / child
- Engineering
- Experimental / general
- Measuremental / evaluation / quantitative
- Personality
- Physiological / comparative

Mid-Ground: Code = 2
- Applied behavioral analysis
- Bioclinical
- Mental retardation / developmental disabilities
- Phenomenological
- When two crossed terms are given (e.g., clinical-learning)

Socially Oriented Subfields: Code = 3
- Clinical
- Community / ecological / environmental
- Counseling
- Educational
- Health psychology
- Industrial / organizational
- School
- Social

H7. The nearer an institution to its state capitol, the greater the percentage of minority earned doctorates.

Distance in miles to state capitol (UCB).

H8. The greater the percentage of minorities living in close, geographic proximity to the institution, the greater the percntage of minority earned doctorates.

A. Population of the city, U.S. Bureau of the Census determined urban area, county, Standard Metropolitan Statistical Area, or Standard Consolidated Statistical Area (whichever are applicable) in which the university is located (USC).

B. Minority population of the city, U.S. Bureau of the Census determined urban area, county, Standard Metropolitan Statistical Area, or Standard Consolidated Statistical Area (whichever are applicable) in which the university is located (USC).

C. Population of the state in which the university is located (USC).

D. Minority population of the state in which the university is located (USC).

H9. The more academically prestigious a department, the lesser the percentage of minority earned doctorates.

A. Percentage of faculty involved in APA matters (AP).

B. Scale score derived from four highly correlated measures of prestige.
- Mean number of publications per faculty member in the department (Cox and Catt, 1977).
- Prestige ranks based on mean and total publications reported by departmental chairpersons (Roose and Anderson, 1970).
- Mean number of citations noted in the Social Science Citations Index (Endler, Rushton, and Roediger, 1978).
- Ranking of schools based on the familiarity of rankers with the schools they ranked (Jones, Lindzey, and Coggeshall, 1982).

H10. The more accommodating a department to actions conducive to the admission and retention of minorities, the greater the percentage of minority earned doctorates.

Number of minority considerations (GSP).

H11. The more diverse an institution, the greater the percentage of minority earned doctorates in psychology.

A. Total number of university faculty in academic ranks (NCES).

B. Total undergraduate enrollment (YHE).

C. Total graduate enrollment (YHE).

D. Number of academic and administrative units such as colleges, schools, divisions, professional schools, etc. (UCB).

E. Total number of graduate degree programs (UCB).

F. Number of research institutes, centers, and other professional units (UCB).

G. Number of service institutions, centers, and other like units (UCB).

RESULTS

Hypotheses one through eight were not supported by the findings. An institutions "Land Grant," public, or private status was not significantly related to the production of minority earned Ph.D. degrees; nor was the age of the department or institution, the social orientation of the department or the number of programs offered, the distance of the institution to its state capitol or the percentage of minorities living in close, geographic proximity to the institution.

Significant correlations in the testing of three hypotheses were found. For hypothesis 9, the correlation of the outcome variable with the prestige scale score was not significant, but with the number of faculty involved in APA related matters it was .30, $p<.05$. The correlation, though, was not in the predicted direction, indicating that faculty involvement with APA is associated with producing greater percentages of minority earned Ph.D. degrees. In regards to hypothesis 10, the correlation of the outcome variable with the number of departmental minority considerations was .30, $p<.001$. Finally, concerning hypothesis 11, a number of university demographics intended to measure diversity of an institution were correlated with the outcome variable and are presented in Table 1.

Table 2 exhibits the results of the cluster analysis. Hypotheses related variables found to have significant relationships to the outcome measure fall, as one might expect, into the structure of cluster one.

To further understand the results of the overall cluster analysis, the interdomain correlations were computed. Table 3 contains this measure of relational strength and direction between clusters.

Table 1
Item Correlations of the Outcome Variable with Various Demographic Variables

	University or College Percent Minority Psychology Ph.D. Degrees		University or College Percent Minority Psychology Ph.D. Degrees
total academic faculty	.29*	academic and administrative total units	.16
total undergrad enrollment	.10	total grad degree programs	.14
total graduate enrollment	.31**	total research units	-.02
		total service institutions	.02
Sum of Group 1	.26*	Sum of Group 2	.15
faculty + grads	.41**		

* p<.05
** p<.001

Table 2
The Four Clusters

	Cluster Loadings
Cluster 1: Variables Related to Higher Percentages of Minority Earned Ph.D. Degrees in Psychology Departments	
1. Higher Percentages of Minority Earned Ph.D. Degrees in Psychology Departments	.53
2. Size of Department	
A greater number of full-time psychology graduate students.	.64
A greater number of full-time psychology department faculty.	.49
A greater number of part-time psychology graduate students.	.32
3. Professional Orientation of Department	
A greater number of APA minority fellowships awarded to the psychology department over five years.	.61
A greater number of psychology department faculty involved in APA related matters (APA officers, APA journal editors, etc.).	.57
4. Size of University or College Graduate School	
A greater total number of graduate students enrolled in the college or university.	.58
A greater total number of faculty in the institution where the psychology department is located.	.55
5. In-State Minority Psychology Ph.D. Degrees	
A higher percentage of minority earned psychology Ph.D. degrees in the state where the institution is located.	.58
6. Other Departmental Characteristics	
A greater number of psychology department considerations advantageous to minorities (no admission fee, etc.).	.57
Fewer admission dates to psychology department Ph.D. programs.	.46
A greater number of Ph.D. programs offered by the psychology department.	.35
The psychology department has existed for a longer time.	.30
7. Location of University or College	
The psychology department's institution is located in a Standard Metropolitan Statistical Area.	.38
The psychology department's institution is located in a U.S. Census Bureau defined urban area.	.32

Table 2 (cont'd)

Cluster 2: Factors Related to Higher Percentages of Minority Earned Bachelor's Degrees in Psychology Departments	
1. Higher Percentages of Minority Earned Bachelor's Degrees in Psychology Departments	.82
2. Urban/rural location of university or college The psychology department's institution is located in a Standard Consolidated Statistical Area.	.65
3. Composition of Area Population A greater percentage of minority populations in the Standard Metropolitan Statistical Area where the psychology department's institution is located.	.51
4. Composition of Department A greater number of part-time psychology department faculty.	.42
Cluster 3: Minority Political Power	
1. Minority population percentages	
A greater percentage of minority group members in the state where the psychology department's institution is located.	.99
A greater percentage of minority group members in the urban area where the psychology department's institution is located.	.83
A greater percentage of minority group members in the county where the psychology department's institution is located.	.64
A greater percentage of minority group members in the city where the psychology department's institution is located.	.34
2. In-State Minority Psychology Bachelor Degrees A higher percentage of minority earned psychology bachelor degrees in the state where the institution is located.	.84
3. Location of university or college A greater distance from the institution in which the psychology department resides, and its state capitol.	.48
4. Department prestige A higher "prestige" scale score.	.37
5. University or college characteristics A greater total number of service units in the institution where the psychology department is located.	.23

Table 2 (cont'd)

Cluster 4: Environmental Characteristics of Certain Psychology Departments	
1. Department specific	
That the psychology department is located in a public institution.	.82
That the psychology department is located in a land grant institution.	.88
The psychology department is located in an older institution.	.29
2. University or college specific	
A greater number of undergraduate students enrolled in the institution.	.72
A greater total number of academic units in the institution where the department is located.	.51
A greater total number of graduate degree programs offered by the institution where the psychology department is located.	.30
A greater number of research units in the institution where the psychology department is located	.29

Table 3
Correlations of Cluster Domains

	Clstr 1	Clstr 2	Clstr 3	Clstr 4
Clstr 1	1.00	.14	.22	-.36
Clstr 2		1.00	.37	-.08
Clstr 3			1.00	-.04
Clstr 4				1.00

DISCUSSION AND CONCLUSIONS

The outcome measure and the variables found statistically significant to it fall, as one might expect, into the structure of Cluster one. Presenting factors related to higher percentages of minority earned Ph.D. degrees in psychology departments, Cluster one loadings might be viewed as a set of recommendations for minorities wishing to pursue Ph.D. degrees in psychology departments.

One variable to be concerned with is the size of the psychology department. All in all, it appears that greater departmental size may be one of the most important factors associated with producing greater percentages of minority earned Ph.D. degrees.

The professional orientation of the department is another related issue. It appears that departments with faculty members involved in APA related matters may be more inclined to strive toward the APA goal of increasing the number of minority earned Ph.D. degrees and/or feel more comfortable, due to their close relationship to APA, in encouraging and helping minorities to seek APA minority fellowships. In addition, these faculty members are in a better position to monitor other departments in their efforts in meeting that goal and in utilizing appropriate recruiting methods. A question for future study is whether minorities already in the program influenced the faculty by promoting departmental recruiting behaviors or whether the department faculty members themselves set forth the initiative.

In another manner of interpretation, departments with faculty involved in APA matters could also have faculty involved in other organizations with control of funds. These positions might be used to influence the funneling of funds to their own departments either directly or through a mechanism not unlike the interlocking directorships of the corporate world. A department with greater amounts of funding coming from outside sources would be less tied to budgetery constraints in funding graduate students. This may be the reason for the unexpected Hypothesis 9 result in which greater percentages of minority earned doctorates were found related to the number of psychology faculty involved in APA related matters.

The cluster loadings indicate that the size of the university or college graduate school is also important. Let us keep this in mind while we recall the pattern of correlations with outcome involving Hypothesis 11. The variables which were <u>not</u> found correlated with the outcome measure were number of undergraduates, number of academic programs, number of graduate degree programs, number of research units, and number of service institutions. It may not have been the diversity of the university that was being measured while testing that hypothesis but rather the size of its graduate school.

The state where the minority student chooses to apply is another variable included in this cluster. The greater the percentage of minority earned psychology Ph.D. degrees earned in a particular state, the greater the chances of someone from a minority group receiving a psychology Ph.D. degree in that

state. The axiom of the proven track record apparently holds in this instance.

There is also a general grouping of departmental characteristics. The variable with the highest cluster loading among them is the number of psychology department considerations advantageous to minorities. Apparently, minorities have a better chance of succeeding if things are done to assist them in gaining admission, in adjusting, and in helping them to remain and complete graduate school. Greater numbers of minority considerations are significantly correlated with greater percentages of minority earned psychology Ph.D. degrees in support of Hypothesis 10; but Cluster 1 is not correlated with Cluster 2 which is a cluster of variables related to higher percentages of minority earned psychology bachelor's degrees. This would first of all suggest that minority considerations are indeed useful in increasing the percentage of minority earned psychology Ph.D. degrees but not minority earned psychology bachelor's degrees. Some other possibilities suggest themselves.

Psychology departments in states with high percentages of earned minority psychology bachelor's degrees may be preparing minorities for doctoral education in other universities. If minorities holding undergraduate degrees are as well informed as majority bachelor's degree holders in the purposes of graduate school, the behaviors expected of graduate students, the general political strategies to be employed, and the lifestyle that must be led to accomplish a successful end, they would take advantage of the opportunity to attend the most prestigious graduate programs. This view is strengthened as we recall that greater percentages of minority earned psychology Ph.D. degrees are related to departments with greater percentages of faculty involved in APA business. This interpretation is further strengthened when one stops to consider that there are socio-economic class distinctions within minority groups as there are within the majority group. Both majority and minority students qualified to go to graduate school may be interested in the most prestigious institutions since graduate schools are attended by greater proportions of individuals in upper socio-economic classes.

Another possibility is that departmental faculty may assume that minorities earning bachelor's degrees would not need other considerations, having proven themselves in the undergraduate system. This would not appear a valid appraisal given the low percentages of college graduates among minorities. First generation undergraduate degree holders would not have the same societal opportunities to learn about the graduate system as others would.

On the other hand, departments in states without high percentages of minorities earning psychology bachelor's degrees may feel they must offer considerations in order to attract minorities from out-of-state. A departmental policy to provide minority considerations could be an effective way to increase the number of minority earned psychology Ph.D. degrees, but more evidence is needed to strengthen this contention. A question

for further research is whether minorities are admitted and complete a program because of minority considerations, or whether a strong minority presence in the program influenced the creation of those considerations.

Fewer admission dates to psychology doctoral programs seem important. Fewer admission dates would mean that more students would enter at the same time providing for stronger social support among peers. Also, it would allow departments to focus their resources on the group of minority students and provide services or other considerations such as an orientation seminar.

The last two departmental characteristics are age of department and number of doctoral programs offered. Older departments may have internalized the philosophy of affirmative action and better learned to attract and graduate minority students. Offering a greater number of doctoral programs may be important in attracting minorities to a department because of broader educational opportunities.

And finally, the location of the university or college in which the psychology department resides seems important. Greater proportions of minority earned psychology Ph.D. degrees are associated with institutions in large urban areas.

In summary, minorities should apply to large, older departments in institutions with large graduate schools. The institution would be found in a large urban area in a state that produces a large proportion of minority earned psychology Ph.D. degrees. This department would have fewer admission dates to its larger number of programs. The department would also be well connected professionally to APA, have a history of receiving APA minority fellowships, and provide a larger number of considerations advantageous to minority graduate students (e.g. waiving certain application fees or providing programs to develop mentoring relationships).

Now let us turn our attention to the variables related to higher percentages of minority earned bachelor's degrees from psychology departments. These undergraduate psychology degree granting institutions are associated with urban areas with a greater percentage of minority group members. These departments are also associated with a greater number of part-time faculty. It is unfortunate that it was not possible to directly measure the notion that role models increase the production of minority earned Ph.D. degrees since no publicly available data currently exists. But it could be argued that since minorities in professional positions are currently few, they are in demand to fill more roles in society than other professionals and would therefore be found in part-time university positions more often than in full-time university positions. The finding that a greater number of part-time faculty is associated with a greater percentage of minority earned psychology bachelor's degrees provides evidence for this arguement and would suggest that a doctoral psychology program could increase the percentage of its minority earned Ph.D. degrees by increasing the number of part-time minority faculty.

The minority political power cluster structure indicates, first of all, that minority populations may have influence in

producing minority psychology bachelor's degrees, but not Ph.D. degrees. Further support for this notion is provided by the stronger relationship found between this cluster of variables (Cluster 3) and the one associated with higher percentages of minority earned bachelor's degrees (Cluster 2) than the one associated with higher percentages of minority earned Ph.D. degrees (Cluster 1).

These findings could indicate that a great many graduate students do not attend schools in their own home states, but rather go where they are accepted, where the financial opportunities are best, or where specific academic interests are better satisfied. These students would not have ties to the local community and would be reluctant, due to graduate study time constraints, to establish them. They would be needed, however, as a base for voicing concerns over the dearth of doctorally educated minorities. As the domestic economy tightens, though, graduate students may not find out-of-state study quite as appealing as it once was.

Other of these loadings may also indicate that minority and majority populations farther away from their state capitol may look upon the university closest to them as having more of a role as an agent of state government and expect the university to have more service units.

The last cluster, which describes large, older, land grant, or public institutions, is negatively related to the first cluster which describes large, older, and urban institutions. Also, the last cluster is not correlated with the minority political power cluster, but the first cluster is. This finding calls for an investigation which could include an attempt to find causative reasons why one group of institutions is associated with minority earned Ph.D. degrees and the other is not. In addition, the mechanisms involved in minority political power in this context and its degree of importance in producing college graduates can be examined. Finally, the issue of size demands further study. Why are larger departments in larger institutions in larger urban areas associated with the production of greater percentages of minority earned psychology Ph.D. degrees? Some reasons might be that there are more chances for social or academic support, for finding role models, for finding a cheap place to live, or for finding a part-time job. The group of institutions described in the last cluster probably has only a short road to the goal of equal opportunity since it appears to be very similar demographically to the group associated with producing greater percentages of minority earned Ph.D. degrees.

Another approach to the further study of minority participation in graduate school is to explore the decision making processes of minority undergraduate and graduate students in regard to graduate training. One example of this sort of investigation might be to explore the common belief that many minority students do not begin thinking about graduate school soon enough in their undergraduate careers. If this belief holds, the minority undergraduate faces the need to rectify an academic record that was not planned with the idea of graduate

school in mind, an impediment to developing suitable qualifications. Other studies could include surveys of minority attitudes toward issues relevant to graduate study, or examinations of associated folklore and behaviors through sociological and anthropological techniques. Many types of studies will be needed to provide data for institutions to use in ensuring a more equitable representation of minorities among psychologists.

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